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**UNITED STATES DISTRICT COURT
 NORTHERN DISTRICT OF CALIFORNIA
 SAN JOSE DIVISION**

GPNE CORP., <div style="text-align: right;">Plaintiff,</div> <div style="text-align: center;">vs.</div> APPLE INC., <div style="text-align: right;">Defendant.</div>		Case No. 5:12-cv-02885-LHK JURY TRIAL DEMANDED GPNE'S OPENING BRIEF ON CLAIM CONSTRUCTION
GPNE CORP., <div style="text-align: right;">Plaintiff,</div> <div style="text-align: center;">vs.</div> AMAZON.COM, INC., <div style="text-align: right;">Defendant.</div>		Case No. 5:12-cv-03055-LHK JURY TRIAL DEMANDED
GPNE CORP., <div style="text-align: right;">Plaintiff,</div> <div style="text-align: center;">vs.</div> NOKIA CORP. AND NOKIA INC., <div style="text-align: right;">Defendants.</div>		Case No. 5:12-cv-03056-LHK JURY TRIAL DEMANDED

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GPNE CORP., Plaintiff, vs. PANTECH CO., LTD AND PANTECH WIRELESS, INC., Defendants.		Case No. 5:12-cv-03057-LHK JURY TRIAL DEMANDED
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I. INTRODUCTION

A. Background of Plaintiff GPNE

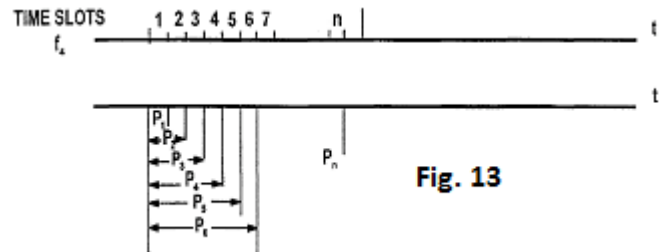
In 1993, Hawaiian residents Gabriel Wong and Po Tsui (the “G” and “P” in “GPNE”) conceived of a system and two-way mobile data communications devices to overcome the predominant one-way pagers prevalent at that time which required timely access to landline telephones to substantively communicate in response to a “page.” Their invention anticipated by several years today’s ubiquitous “smartphones” that send and receive electronic mail, picture, sound and movie files, and other data, by communicating over the world’s cellular network base stations. Their original application spawned a worldwide patent portfolio, including the three Patents in suit,¹ now licensed by some of world’s largest companies. This portfolio is owned and managed by GPNE Corp., a telecommunications research and licensing company based in Hawaii and founded by Mr. Wong, who currently serves as Director and Chairman.

B. Overview of the GPNE Patents-In-Suit

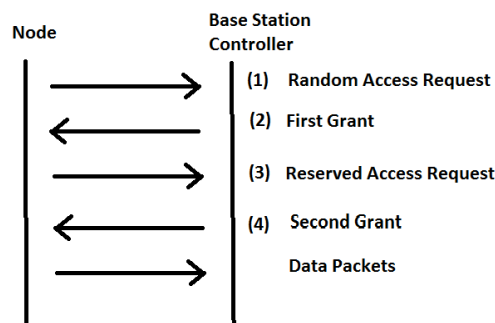
The Patents describe a wireless mobile data communication system where multiple “nodes” in a network (*i.e.*, mobile devices) interact with a central controller to send/receive data with each other through the controller in an efficient and organized way. The nodes and controller communicate data wirelessly over radio frequencies much in the same way FM radio stations broadcast music to radios in a given area, though these nodes also transmit up to the central stations (“base stations” where the network controllers reside). A primitive simple but inefficient system might allocate two frequencies out of thousands to each node in a network: one frequency for each node for “upstream” transmission to the controller, and one frequency for the controller to send information “downstream” to the node. Such systems would be inefficient because the scarce and valuable frequencies would be unused most of the time. In comparison, in a typical modern “multiple access” system, the nodes share frequencies and are allocated radio resources dynamically as needed so that a given finite set of radio frequencies can accommodate many nodes nearly simultaneously.

¹ The three patents in suit: 7,555,267 (“the ‘267 Patent”), 7,570,954 (“the ‘954 Patent”), and 7,792,492 (“the ‘492 Patent”) (collectively, the “Patents”) emanate from a common original application and have identical specifications. These Patents are provided at Exhibits A-C. All of the asserted claims are product claims directed to claimed inventions containing nearly complete overlap of elements and terms, so that the parties do not distinguish between the Patents for purposes of claim construction.

One limitation of shared upstream frequencies is that nodes are prohibited from transmitting at the exact same time on the same exact frequency or the signals will be crossed (a.k.a. a “collision” or “contention”). Therefore, the timing of upstream node transmissions must be coordinated. Well known before the date of the Patents were “time division” systems, whereby repeating allotments of time (frames – measured in 1000ths of a second) on a single frequency are divided into segments (“slots” or “times slots”) so that multiple devices could send their messages in parallel, with their messages (or parts thereof) appearing in slots reserved for them. Thus, as shown in



the adjacent excerpt from Fig. 13 of the Patents, each node (“P”) would need to wait for its slot time to send a part of its message (a “packet” for example), and then wait for the same slot in the next frame to transmit again. A complete message may take multiple packets in multiple slots in sequential frames, which can be reassembled at a receiving end. The Patents are generally directed to a system where nodes make upstream requests to the controllers for allocation of additional upstream resources for sending their data packets. Furthermore, the inventions relate to a back-and-forth *reservation* system that is a two-step or “double phase” request/grant protocol. The asserted claims are directed specifically to a “node” that is programmed with specialized software to render the node capable of practicing this protocol.



The double-phase node-coded protocol of the asserted claims relate to four key signals: (1) a Random Access Signal, (2) a First Grant Signal, (3) a Reserve Access Signal, and (4) a Second Grant Signal. The Random Access Signal is “random” when the node initially does not have an upstream resource yet reserved for it to send

anything, instead it can randomly select a resource to send a brief signal to get the attention of the controller, which could coincidentally be selected by a different node (*i.e.*, it can “collide” with other such signals from other nodes). Assuming the controller properly receives the Random

Access Signal, it sends a First Grant Signal back to the node specifying a new upstream resource (such as a time slot on a specific frequency) that the node can use to transmit a Reserve Access Request Signal. This assignment is of a “reserved” upstream resource not in use by other nodes so the node can send more information about the node’s desire to send its actual data message that is broken down into numbered packets. After receiving the Reserve Access Request Signal, the controller grants additional upstream resources for the node to send data packets in a Second Grant Signal. After this double-phase reservation process, the node is in a position to transmit the message, in the form of data packets to the controller (and the controller handles forwarding that message downstream to the destination node). The asserted claims are all directed to such specially programmed nodes (i.e., mobile wireless devices) with this data packet communications reservation access capability.

In the description of certain embodiments in the specification, and in some claims of the Patents, the signals above are specified as being on separate radio frequencies. In other claims, there are no specified frequency limitations. There are also claim elements addressing the randomly generated information associated with the Random Access Request Signal, the numbering of the data packets to allow the controller to know how much data the node has to send, and several other features, discussed *infra*.

II. LEGAL STANDARD

GPNE respectfully incorporates by reference the general principles of claim construction set forth in this Court’s opinion in *Fujitsu Ltd. v. Belkin Int’l, Inc.*, No. 10-CV-03972-LHK, 2012 U.S. Dist. LEXIS 13490, at *10-16 (N.D. Cal. Feb. 3, 2012).

III. ARGUMENTS AND AUTHORITIES²

A. “node”

GPNE’s Construction	Defendants’ Construction
A device in a network that can transmit and receive information	A pager operating independently of a telephone network

As described in the specification background, before this invention, there were pagers,

² GPNE respectfully submits for the Court’s consideration the Declaration of Dr. Esmail Dinan – an expert in the field of wireless communications pertinent here. See Exh. E. Dr. Dinan was deposed by multiple counsels for all four defendants on March 27, 2013.

1 landline telephones, cellphones, and even combination pager-cellphones. Exh. A ('267 Patent),
2 Col. 1:35-51. To contact a mobile party who owned a pager, one could dial the 7-digit pager
3 number from a landline and the paged party would (eventually) call back the paging party on a
4 landline, or use a cellphone if available (cellphones were rare and in a primitive stage at the time
5 of the invention). Nevertheless, there were no established two-way mobile wireless devices that
6 obviated phone calls by allowing robust data packet communications, and none at all with the
7 specially programmed reservation access capability of the claimed inventions. That is what
8 Messrs. Wong and Tsui invented, and what device the Patents claim as a "node." GPNE's
9 proposed construction conforms to the ordinary meaning of this term: "a device . . . that is
10 connected to the network and is capable of communicating with other network devices." Exh. D,
11 p. 366 (definition no. 2 of "node" from Microsoft Computer Dictionary).

12 The background section in the specification describes historical one-way pagers. Exh. A,
13 Col. 1:30-62; see also Exh. E (Declaration of Dr. Esmael Dinan), ¶¶ 26-29. The specification
14 also describes two pieces of prior art (U.S. Patent No. 5,117,449 and RE 33,417) that relate to
15 combining a pager and a cellular telephone into one unit. These prior art references use the
16 "pager" part of the unit for purposes of initiating a subsequent telephone conversation. In
17 contrast, the Patents relate to a two-way data communication system whereby devices can send
18 and receive data packets back and forth in a network, obviating the necessity of a telephone call.
19 That is, the devices contemplated in the Patents are precisely not the *mere* "pagers" of that time,
20 but enhanced devices that the remainder of the specification calls "pager units" with various
21 components (including a microprocessor, memory, interface, and code in the memory that can
22 carry out the protocol). See Exh. A, Col. 3:51-4:8; Fig. 2.

23 Defendants propose an incorrect ambiguity by inserting the term "pager" into "node" as it
24 (1) ignores the entirety of the specification that manifestly improves upon the one-way pagers of
25 the time, and (2) only begs the question of what a "pager" is or does in the context of the asserted
26 claims. If Defendants are using the term to refer to one-way pagers, such usage is completely at
27 odds with the devices described in the asserted claim, as such devices specifically call out units
28 that can send *and* receive data packets. See Exh. J, p., 1515 (McGraw-Hill Dictionary of

1 Scientific and Technical Terms (6th ed. 2002) (defining “pager” only as “a *receiver* in a radio
2 paging system.”) (emphasis added)). A POSA understands that the specification discloses a new
3 device that is not merely a “pager” as of 1993/1994, but a pager type apparatus enhanced with
4 pre-programmed software and appropriate hardware to allow for two-way data packet
5 communications through a central control station. Dinan Decl., Exh. E, ¶ 28. On the other hand,
6 if Defendants use the term to refer to the two-way paging units described in the Patents, then the
7 term “pager” is confusing at best and superfluous at worst.

8 Defendants further seize on the idea that the Patents obviate *the need* to return a page by a
9 telephone call and elevate that to a negative exclusion claim limitation that the node *must*
10 “operate independently from a telephone network” (though all of today’s smartphones combine
11 data and telephony networks to varying extents). The specification supports no such exclusion.
12 Defendants’ construction appears to be based on a single sentence very late in the specification:
13 “Thus, the invention provides a two-way paging system which operates independently from a
14 telephone system for wireless data communication between users.” Exh. A, Col. 14:14-16.
15 However, this sentence appears in the context of the whole specification as describing that the
16 invention avoids the necessity of using a telephone voice call to communicate, and appears near
17 the very end of fourteen columns of technical discussion about the two-way data communication
18 system using these nodes and their capabilities. The quote does not state that the “node” operates
19 independently from telephony, but that the “two-way paging system” does “for wireless data
20 communication between users.” To a POSA this means that the data communications do not
21 need to use a circuit switched telephone line and Defendants take the sentence completely out of
22 context. Dinan Decl., Exh. E, ¶¶ 32-36.

23 GPNE’s view is the only one consistent with the file histories wherein a declaration
24 submitted by one of the inventors, the same sentence quoted above is viewed in context of the
25 inventors’ own words which show this invention obviated the need for a telephone call:

26 The paging system used in the paging industry of today is a passive device in which a
27 pager could only be paged and **cannot return a page call without accessing the**
28 **telephone system**. This disclosure depicts the design of a two way paging system which
operates independently from the telephone system for a wireless data communication
between the users.

Exh. F, GPNECorp. 00000314 (emphasis added). Likewise, the same document from the file history continues (“Features of the System”):

Returning page call. It can operate independently from the existing telephone system to return a page call.

Id., GPNECorp. 00000323 (emphasis added).

This clearly shows the genesis and meaning of the line from the specification that Defendants note -- where the prior art *required* use of a telephone system to return a page call, the two-way data communication system of the invention obviates that need and can operate – to that extent – independent from the telephone network. But that is not a basis to read in an exclusion that the node itself at all times must be “operating independently” from telephony. Indeed, the specification refers to interaction with telephones at various places. Figures 1 and 3, and the associated specification disclose the presence of a telephone answering system and that the control station can field telephone calls for the pager. Exh. A, Col. 3-Col. 6 (Fig. 1 (items 48 and 36), Fig. 3 (steps 108 and 112), and Fig. 7 (items 448 and 36) all show “phone” elements integrated with the paging system described in the Patents.) Thus, Defendants’ construction is plainly and directly at odds with the explicit disclosure of the Patents. GPNE’s construction comports with various pieces of extrinsic evidence and the claim language itself. See Exh. D, p. 366 (Microsoft Computer Dictionary, (5th ed. 2002), definition no. 2 of “node”).

B. “frequency”

GPNE’s Construction	Defendants’ Construction
<i>Plaintiff does not believe that a specific construction is necessary. To the extent the Court determines that a specific construction is warranted, however, Plaintiff proposes: The center point in a finite, contiguous band of the electromagnetic spectrum, generally expressed in Hertz (number of cycles per second).</i>	Oscillation rate of a radio wave.

Those members of the jury old enough to recall dial FM radios are well familiar with the concept of a radio “frequency,” But if necessary, GPNE’s construction expands how a POSA would understand the term “frequency” in this context. GPNE’s construction is based on the undisputed fact that radio transmissions that carry data (*e.g.*, a television broadcast, a CB radio signal, a wireless baby monitor, etc.) occur over a range of frequencies. Thus, the local

radio station KBAY FM is advertised as being broadcast on 94.5 megahertz (MHz), but in reality, is broadcast over a range (e.g., from about 94.45 MHz to 94.55 MHz), with the “frequency” 94.5 MHz being the center frequency of the transmission that makes up the broadcast. Users of older radios that had to be manually tuned to a station would experience this phenomena when they would begin to faintly hear a station (usually with static) before positioning the dial directly on the centerline of a given frequency of the radio station. Accord. Dinan Decl., Exh. E, ¶¶ 41-43, 43:

A POSA would have understood that wireless signals (for example, in AMPS, IS-95, GSM, microwave transmission, TV radio signal, broadcast FM radio, etc.) has a contiguous band of electromagnetic spectrum. The frequency of the wireless communications signal refers to the center frequency of the transmitted signal. For example, the frequency of an FM radio channel refers to the center frequency of the contiguous band of the electromagnetic spectrum transmitting the FM radio channel.

In FM radio signals (“Frequency Modulation”), useful information (such as digital data) is broadcast by taking a signal that contains the data to be transmitted and combining it with what is known as a carrier signal. The process of combining these signals is referred to as modulation.³ While the carrier signal can be a signal at a single frequency, once it is combined with useful information, the resulting signal is then spread over an effective range of discrete numerical frequencies. As explained in How Radio Signals Work:

It turns out that **every time a carrier wave is modulated**, the modulation process generates sidebands. The range of sidebands may be different for different modulation processes, but the general principle is that modulation converts a single-frequency carrier wave into a signal containing sidebands that occupy a definite width of spectrum space – a channel of a particular width.

Exh. G, p. 24 (emphasis added). This is the essence of GPNE’s construction – that the term “frequency,” as used in the claims, simply denotes the center frequency of a band of frequencies on which a signal is sent/received. Though Defendants here did not retain an expert on this issue, GPNE notes that during the claim construction process in the Northern District of Texas concerning the same Patents, Research in Motion’s expert stated that

³ Examples of how the specification contemplates modulating signals are found in Exh. A at Col. 3:27-29 (“Central control station 20 also includes a clock unit 59 which generates a local clock signal f_{clk} (which, in turn, is used to modulate frequency f_1) (emphasis added) and at Col. 3:53-56 (“Receiver 62 receives the two local frequencies f_1 , and f_2 , which frequencies have been modulated to carry in-coming communications information . . .) (emphasis added).

GPNE's construction, the same construction proposed here, was not technically inaccurate. See Exh. I, p. 104:14-16.

Defendants' construction ("oscillation rate of a radio wave") tactically oversimplifies the issue by ignoring that signals actually occur over a band as shown above.

C. "first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal"

GPNE's Construction	Defendants' Construction
<p><i>Plaintiff does not believe that a specific construction is necessary. To the extent the Court determines that a specific construction is warranted, however, Plaintiff proposes:</i></p> <p>a "first grant signal"</p> <p>(i.e., an initial signal that gives the node permission to transmit additional signals)</p> <p>includes information relating to allocating a second slot to the first node for transmitting the "reserve access request signal"</p> <p>(i.e., a signal sent by the node using resources that are not shared with other nodes which includes information related to a node's request for the provision of additional resources for transmitting data packets).</p>	<p>[First grant signal] including information identifying a slot to use for transmitting the 'reserve access request signal,' which the first node identifies as intended for it because the information is transmitted in the same timeslot within which the first node transmitted the 'random access request signal'</p>

If the Court believes a construction for this phrase is warranted, GPNE has broken the phrase into a number of sub-phrases. Specifically, GPNE's construction construes the term "first grant signal," the phrase "includes information relating to allocating a second slot to the first node for transmitting" and the term "reserve access request signal."

This phrase is part of the larger phrase:

receive a first grant signal subsequent to transmission of the random access request signal, said first grant signal including information relating to an allocation of a second slot to the first node for transmitting the reserve access request signal for transmitting first data packets containing a message;

Exh. A, Col. 15:4-9. The larger phrase puts into context that what is at issue is the nature of certain information that is contained in the first grant signal. Thus, as is described by the claims – the node receives a first grant signal in response to sending a random access request signal.

1 Included in this first grant signal is information the node subsequently uses to send a reserved
2 access request signal.

3 With this explanation in mind, the ordinary meaning of “grant signal” is a signal that
4 grants permission. Exh. H, p. 831 (Webster’s Encyclopedic Unabridged Dictionary of the
5 English Language (1996), definition no. 2 of “grant”). In the context of the Patents, the term
6 “first grant signal” is the first (*i.e.*, initial) signal that grants the node permission to transmit
7 additional signals. For example, in Claim 1 of the ‘267 Patent, after the first grant is received, the
8 node subsequently transmits additional signals, such as (1) the reserve access request signal and
9 (2) data packets:

10 transmit a random access request signal in a first slot, the random access request
11 signal including information that allows determination that the first node requires an
12 allocation of resources to transmit a reserve access request signal;

13 receive a first grant signal subsequent to transmission of the random access
14 request signal, said first grant signal including information relating to an allocation of a
15 second slot to the first node for transmitting the reserve access request signal for
16 transmitting first data packets containing a message;

17 transmit the reserve access request signal in the second slot in response to the first
18 grant signal;

19 receive a second grant signal subsequent to transmission of the reserve access
20 request signal, said second grant signal including information relating to an allocation of
21 additional resources for transmitting the first data packets; and

22 transmit the first data packets in response to the second grant signal, wherein the
23 first data packets can be transmitted during transmission of a request signal by a second
24 node into a third slot assigned to the second node

25 Exh. A, Col. 14:66-Col.15: 16 (emphasis added).

26 Turning to the phrase “includes information relating to allocating a second slot to the first
27 node for transmitting,” this is a description of information contained in the first grant signal.
28 GPNE notes that most of the important terms in this phrase have already been construed or are
undisputed: (1) “slot”⁴ and (2) “node.”⁵ GPNE believes that the construction of other words in
this phrase would not simplify matters or make the application of this phrase by a jury any easier.
Thus, GPNE has declined to find substitute words for terms such as “allocation” and
“transmitting” as these terms do not have any special meaning in the Patents and will be readily
understood by a jury. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en
banc); *see also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed.

⁴ The term “slot” refers to a time slot, which is a reoccurring interval of time in which devices can transmit and receive information.

⁵ The proper construction of “node” is set forth in Section III(A).

1 Cir. 2008) (“We, however, recognize that district courts are not (and should not be) required to
2 construe every limitation present in a patent’s asserted claims Claim construction is not an
3 obligatory exercise in redundancy.” (internal quotations and citations omitted)).

4 Finally, GPNE has proposed a construction for the sub-phrase term “reserve access
5 request signal.” GPNE’s construction gives meaning to the “reserved” portion of this phrase by
6 requiring the signal be sent using resources that are not shared with other nodes. This type of
7 operation is explained in the specification whereby once a random access request signal is sent,
8 the central control station will respond by assigning a reserved time slot, which the node can
9 subsequently use to transmit a reserve access request signal. For example, when a node enters a
10 new cell, the central control station will “locate an available time slot for the in-wandering
11 [node], and then associates that available time slot with the ID of the in-wandering [node]”
12 thereby assigning the node a “time slot on [the central control station’s] local frequencies.” Exh.
13 A, Col. 13:25-35. Afterwards, if the node remains active in that cell and needs to transmit a
14 message, it has an assigned (“reserved”) frequency and identified time slot to in which to make
15 the request. The assigned frequency and time slot for communicating with the central control
16 station represents an opportunity for a node to transmit a signal using resources that are not
17 shared with other nodes, which maps to the “reserved access” aspect of GPNE’s proposed
18 construction.

19 The remaining portion of GPNE’s construction is derived from claim elements that follow
20 the disputed phrase in the asserted claims. For instance, claim 1 of the ‘267 Patent states that
21 reserve access request signal is for the node to “transmit[] first data packets containing a
22 message.” Thus, it is clear from the claim language that the reserved access request signal
23 “includes information related to a node’s request for the provision of additional resources for
24 transmitting data packets.” The Federal Circuit has stated that “the claims themselves provide
25 substantial guidance as to the meaning of particular claim terms,” and this is a good example of
26 such. *Phillips*, 415 F.3d at 1314.

27 Defendants urge a tactically narrow construction to support non-infringement positions.
28 Notably, the Defendants’ do not construe the term “first grant.” Instead, they simply substitute

“information identifying a slot to use for transmitting the ‘reserve access request signal’” for the claim language “information relating to an allocation of a second slot to the first node for transmitting the ‘reserve access request signal.’” This substitution is not warranted by anything in the intrinsic record and does not clarify matters for a jury.

The last portion of Defendants’ construction in which “the first node identifies as intended for it because the information is transmitted in the same timeslot within which the first node transmitted the ‘random access request signal’” is confusingly off-base. The parties agree that: (a) there is a two-phase request/grant comprising a first random access request/grant, and then a second reserved access/grant; and (b) that the result of the random access request is to receive a grant of the reserved access slot for making the reserved access request. That is, the parties agree that *what* is granted in the “first grant” is the “slot” for the reserved access signal. This is readily understood from the claim text. Defendants, however, seek to read in to the first grant one way *how* a node may interpret downlink signals from a controller to identify itself as the recipient of a first grant. GPNE submits that this claim element is silent on *how* a signal is recognized and thus Defendants’ attempt to import such an additional concept into their construction is improper. While such a mode of operation may be in the specification, this claim element is not directed to this recognition mode, and it no more than a blatant reading in of an extraneous limitation. *See E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988) (“Where a specification does not *require* a[n extraneous] limitation, that limitation should not be read from the specification into the claims.”) (emphasis in original).

D. “randomly generated information”

GPNE’s Construction	Defendants’ Construction
<i>Plaintiff does not believe that a specific construction is necessary. To the extent the Court determines that a specific construction is warranted, however, Plaintiff proposes: Information that is randomly generated.</i>	Identification of the randomly selected time slot.

Certain claims, such as claim 13 of the ‘267 Patent, indicate that “randomly generated information” is sent by a node and returned back from the controller:

wherein the random access request signal transmitted from the first node includes randomly generated information created by the first node, wherein the first grant returns

said randomly generated information to the first node to enable identification of the first node as a desired recipient of the first grant.

Exh. A, Col. 16:1-7 (emphasis added).

This phrase consists of ordinary words easily understood by lay jurors, which obviates the need for a specific construction. *Phillips*, 415 F.3d at 1314. GPNE contends that “randomly generated information” is any information that may be randomly generated by a node and sent to a controller and received back so that the node can identify itself as the recipient of that signal back (which signal would carry other information such as a second reserved slot). That is all that is claimed. Since there is no evidence the patentees intended to act as their own lexicographers, and there is no indication that this term has special meaning to a POSA, there is heavy presumption that the plain and ordinary meaning governs. *CCS Fitness v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (There is a “‘heavy presumption’ that a claim term carries its ordinary and customary meaning.”). Defendants’ construction attempts to read into all claims the embodiment of the specification that uses the identity of a randomly selected slot as the information. This is improper. *See Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed. Cir. 1988) (“Where a specification does not *require* a limitation, that limitation should not be read from the specification into the claims.” (emphasis in original)). While the specification may disclose randomly selected time slots as an example of randomly generated information, see Exh. A at Col. 11:47-12:2, the claim language chosen by the patentee is broader and should be construed accordingly. *See Acromed Corp. v. Sofamor Danek Group*, 253 F.3d 1371, 1383 (Fed. Cir. 2001) (“[t]his court will not limit a patent to its preferred embodiments in the face of evidence of broader coverage by the claims.”); *Nazomi Commc’ns, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims may “embrace different subject matter than is illustrated in the specific embodiments in the specification.”). The POSA would understand there are other ways that other types of “randomly generated information” could be used. See Dinan Decl., Exh. E, ¶¶ 49-50.

E. “count value”

GPNE’s Construction	Defendants’ Construction
A numeric representation of the amount of remaining data to be transmitted.	The number of consecutively related packets emanating from a transmitter.

1 Claim 18 of the '954 Patent is exemplary of how this disputed term is used in the claims:

2 wherein the interface of the first node is further controlled by the processor to transmit
3 information relating to a total number of related ones of the multiple data packets being
4 transmitted together, the total number providing a count value for the communication
5 controller to determine when the multiple data packets being transmitted together are
6 completely received.

7 Exh. B, Col. 17:30-36.

8 The specification envisions that two-way data messages are sent and received using the
9 claimed "node" as the message input device, such as with a keyboard or touch screen. Exh. A,
10 Col. 14: 41-49. The specification discloses that once a message is entered, the processor on the
11 node "packetizes" the data in multiple individual data packets that are ultimately reconstituted
12 into the message at the receiving node. Exh. A, Col. 7:52-59, Col. 5:17-30, Col. 2:58-59 and Fig.
13 12; see also Dinan Decl., Exh. E, ¶¶ 60-71. As is apparent from Claim 18 above (and numerous
14 other claims using "count value") and the specification, the node packetizes a message,
15 determines the total number of packets comprising the message, and dynamically communicates
16 upstream to the controller information as to the total number of related packets and the count
17 number of each packet being received. This information is called a "count value" in the claims.
18 This enables the controller to know both: (a) the total number of related packets to come (i.e., the
19 remaining data); and (b) when it has received all of the related packets that comprise the message
20 from the node. One method for accomplishing this is described in connection with the first
21 preferred embodiment: the "packets *may* be formatted in a manner to indicate the number of
22 consecutively related packets emanating from a transmitter (*e.g.*, there may be a separate packet
23 field indicating the continuation number of related packets)." Exh. A, Col. 5:26-28). Obviously,
24 the point of this information is that the controller knows there are more data packets to come for
25 this message – that it is not done receiving the message. Thus, GPNE construes count value as "a
26 numeric representation of the amount of remaining data to be transmitted."

27 Defendants' construction appears to address the total number of packets – a static number
28 ("the number of consecutively related packets emanating from a transmitter"). More accurately,
the claims and relevant portions of the specification are directed to status information that allows
the controller to know and anticipate when the node will be finished with a data transmission

enabling the controller to better manage network resources. The specification denotes that the separate packets making up a message may be referred to as “continuations” of the message content, and thus the specification’s reference to a “continuation number” signifies a dynamically assigned number to each packet. Exh. A, Col. 5:26-30; Exh. E, ¶¶ 62-64. For this sequential numbering (claimed as “count value”) to indicate the “number of consecutively related packets” and serve as an alternative to a termination character as it must, see Exh. A., Col. 5:17-30, there must be some non-static information about where in the count that packet occurs. Dinan Decl., Exh. E, ¶ 66.

F. “interface [configured/controlled] by the at least one processor to [transmit and receive terms]”

GPNE’s Construction	Defendants’ Construction
Electronic circuitry capable of being configured/controlled by the processor(s) according to instructions in the memory, that allows the processor(s) to communicate with a transceiver.	<p>Electrical connections (<i>e.g.</i>, wires or interconnect) that allow signals to pass between the processor and a transceiver (<i>i.e.</i>, transmitter / receiver components).</p> <p>The functional language purportedly describing how the interface is controlled or configured imparts no structure to the interface and, therefore, is entitled to no patentable weight in distinguishing the prior art.</p> <p>Alternatively, if accorded patentable weight, this functional language renders the claims indefinite as hybrid apparatus / method claims.</p> <p><i>The Nokia Defendants do not believe this phrase needs to be construed.</i></p>

Each of the asserted claims contains a non-limiting preamble, followed by elements describing the “node” as follows:

A first node in a data network, the data network including a plurality of nodes including the first node, the first node comprising:

at least one processor;
a memory providing code to the at least one processor; and
an interface configured by [or, “controlled by”] the at least one processor to:

transmit a random access signal...
receive a first grant...
transmit a reserved access signal...
receive a second grant...

transmit data packets...⁶

GPNE sees no genuine dispute here as these apparatus claims are directed to a node that is pre-programmed with specialized code in memory that is implemented *on demand* by a processor to configure/control the interface to send and receive data packet communications. GPNE's unasserted method claims are directed to methods of performing the send/receive signaling steps. Exh. B, claims 1-11; Exh. C, claim 1.⁷

Defendants are divided on this issue. Defendant Nokia agrees with GPNE that no construction is necessary. Defendants Amazon, Pantech and Apple raise esoteric straw man arguments over the "patentable weight" of the "transmit and receive terms" to manufacture an invalidity defense. Defendant Amazon identified in discovery, for its own part, an expert declaration on this issue.

The non-Nokia Defendants attempt to create a "heads I win, tails you lose" position for the Court by first casting the asserted claims as pure hardware structure divorced of any programming code, and then contending that the signals of the claims are not claim elements at all – that the signal elements are not entitled to "patentable weight." On that argument, the claims are directed only to a generic device with a memory, processor and interface, and no more. Of course, such a claim would recite no patentable invention. Or, the non-Nokia Defendants contend, in the "tails you lose part," that the signal elements are entitled to patentable weight but they are process steps converting the claim into a hybrid apparatus/method that Defendants contend is invalid as indefinite.

As to characterizing GPNE's claims as "hybrid apparatus/process" in order to allege invalidity on the basis of 35 U.S.C. § 112 for indefiniteness, GPNE assumes Defendants will trundle out *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005) and try to side-step the presumption of validity afforded by 35 U.S.C. § 282. However, because

⁶ GPNE collectively refers to these as "transmit and receive terms." Defendants refer to these same terms as "[functional language]."

⁷ Unasserted claim 1 of the '492 Patent states: "1. A method of operating a data communication system, the data communication system including at least a first communication controller and at least a first node, the method comprising: ... [What follows in this method claim is steps of the process relating to the similar signals]." See Exh. B.

of the specific language at issue in *IPXL*⁸, Courts in this district have recognized that “[t]he *IPXL* rule does not apply where the claims require capability, but not actual use.” *See Yodlee, Inc. v. Cashedge, Inc.*, No. C 05-01550 SI, 2006 U.S. Dist. LEXIS 86699, at *10 (N.D. Cal. Nov. 29, 2006) (internal quotation and citation omitted). Indeed, “[c]ourts consistently find that claims containing ‘both a physical description of an apparatus and a description of the apparatus function, e.g., ‘communicates,’ ‘populates,’ ‘configured to,’ ‘and upon activation’ were not impermissible apparatus-method claims. Instead, these claims simply use active language to describe the capability of the apparatuses; they do not claim the activity itself.” *Vistan Corp. v. Fadei USA, Inc.*, No. C 10-4862 JCS, 2012 U.S. Dist. LEXIS 59348, at *25-26 (N.D. Cal. Apr. 27, 2012) (internal quotations omitted) (citing *Ricoh Co. v. Katun Corp.*, 486 F. Supp. 2d 395, 402 (D. Del. 2007)). Other Courts have explained that *IPXL* “stood for the narrow rule that a single claim ‘may not purport to cover a system, independent of any use of the system, and simultaneously purport to cover a particular use of the system.’” *Datamize, LLC v. Plumtree Software, Inc.*, No. C 04-2777 VRW, 2007 U.S. Dist. LEXIS 97965, at *34 (N.D. Cal. Aug. 7, 2007) (quoting *Collaboration Props. v. Tandberg ASA*, No. C 05-01940 MHP, 2006 U.S. Dist. LEXIS 42465, at *19 (N.D. Cal. June 22, 2006)).

Between these esoteric polar extremes is the common sense ordinary reading given by GPNE, the Patent Office, and a POSA. The node of the claimed invention is programmed with specific instructions that enable the nodes to be capable of practicing the signals on demand. In multiple places in the specification, it is very clear that the devices described have certain programming instructions that allow them to send and receive certain signals to achieve the claimed invention results. For example, the specification describes a “first embodiment” for sending a message from a node that has already been assigned a reserved slot, and after the message is typed into the device by the user, the unit on its own sends the reserved access request, then waits for grant, and then sends data. This happens automatically without any

⁸ The challenged dependent claim recited: “the *system of claim 2* [including an input means] wherein the predicted transaction information comprises both a transaction type and transaction parameters associated with the transaction type, and *the user uses the input means* to either change the predicted transaction information or accept the displayed transaction type and transaction parameters.” *IPXL*, 430 F.3d at 1384 (emphasis and insertion in original).

1 downloading of software from the controller or from another source. The user does not type in a
 2 command “send reserved access” or “send data,” it just happens based on pre-programming.
 3 Exh. A, Col 6:57-7:17.

4 Likewise, the operation of a “second embodiment” shows that when the node detects a
 5 new controller ID on a common frequency, it automatically begins the random access process,
 6 which then leads to the multiple signals to obtain a new set of local frequencies, and the
 7 switching of the device to the new frequencies. Exh. A, Col. 11:34-12:32. There is nothing in
 8 the specification that intimates the nodes of the claimed invention require additional
 9 programming or input from a user after they are manufactured. See Dinan Decl., Exh. E, ¶¶ 72-
 10 76 (“the first node comprising: at least one processor; a memory providing code to the least one
 11 processor; and an interface controlled by [or configured by] the least one processor to...” means
 12 “the memory is programmed and thus capable of making instructions available to a processor,
 13 and the interface is circuitry capable of being configured /controlled by the processor(s)
 14 according to instructions in the memory, that allows the processor(s) to communicate with a
 15 transceiver⁹.”)

16 G. “providing code to”

GPNE’s Construction	Defendants’ Construction
<i>Plaintiff does not believe that a specific construction is necessary. To the extent the Court determines that a specific construction is warranted, however, Plaintiff proposes: capable of making instruction available to.</i>	Which is currently supplying code to.

21 For context, this disputed phrase is part of the larger phrase “a memory providing code to
 22 the at least one processor.” Exh. A, Col. 14:64. As discussed in the previous Section, the
 23 asserted apparatus claims are directed to a node that is pre-programmed with specialized code in
 24 memory that is implemented *on demand* by a processor to configure/control the interface to send
 25 and receive data packet communications. GPNE contends that this term has no special meaning
 26 and would be readily understood and applied by a jury. *See Phillips*, 415 F.3d at 1314. Should
 27

28 ⁹ A transceiver is a device comprising both a transmitter and a receiver (to send and receive signals) which
are combined and share common circuitry or a single housing.

the Court determine that a specific construction is necessary, GPNE's construction should be adopted because it is consistent with the ordinary meaning of the constituent terms of the disputed phrase as it is used in the rest of the larger clause: a memory must be capable of providing instructions (*i.e.*, "code") to the processor. *See Yodlee*, 2006 U.S. Dist. LEXIS 86699, at *11 ("The claims simply use active language to describe the *capability* of the apparatuses; they do not claim the activity itself.") (emphasis in original)).

Defendants concede that the term "code" requires no special meaning as evidenced by its use in their proposed construction. Further, Defendants offer no special meaning for the term "supplying" as "providing" is a synonym. That leaves no other components for construction. Regardless, Defendants seek to graft on a "current" temporal limitation to this otherwise simple phrase. This is a textbook example of adding an extraneous limitation and Defendants' attempt to coax the Court to adopt such a construction is particularly egregious considering there are no words left in the disputed phrase to tether such a limitation. Since there is no temporal limitation in the claim language, Defendants' invitation to re-draft the claims should be declined. *See Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1344 (Fed. Cir. 2009) ("It is likewise well-settled that courts generally may not re-draft claims; we must construe the claims as written."); *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 799 n.6 (Fed. Cir. 1990) ("Nothing in any precedent permits judicial redrafting of claims."). Furthermore, as noted above, the Courts in *Vistan* and *Yodlee* noted that the use of active language is generally used to describe capability, not claim the activity its self, which further undermines Defendants' position. *Vistan Corp.*, 2012 U.S. Dist. LEXIS 59348, at *25-26; *see also Yodlee*, 2006 U.S. Dist. LEXIS 86699, at *11.

H. "allocation of additional resources for transmitting the data packets/allocation of additional resources for transmitting the first data packets"

GPNE's Construction	Defendants' Construction
<i>Plaintiff does not believe that a specific construction is necessary. To the extent the Court determines that a specific construction is warranted, however, Plaintiff proposes: Providing additional opportunities for transmitting the/first data packets.</i>	Assignment of a second dedicated frequency to the same node for transmitting the message, while retaining the assigned time slot for transmitting the "reserve access request signal."

1 This claim element relates to the “second grant” in response to the reserved access signal
 2 (i.e., whereas the “first” grant is to the prior random access signal), whereby the controller
 3 provides uplink radio resources reserved for a node to send up its data packets. Thus, this
 4 language appears generally as:

5 said second grant signal including information relating to *an allocation of additional*
 6 *resources for transmitting the first data packets*

7 Exh. A, claims 1, 30, 39; Exh. C, Claims 28 and 37.

8 GPNE submits the ordinary meaning of this clause controls and that no construction is
 9 necessary, *see Phillips*, 415 F.3d at 1314, but that the term may be simplified further if necessary
 10 as “providing additional opportunities for transmitting the/first data packets.” It is readily
 11 apparent that the claim element only requires that a node be configure to receive a second grant
 12 that relates to an allocation of additional resources to send its data packets. Dinan Decl., Exh. E,
 13 ¶¶ 51-59.

15 Defendants do not seek to construe the plain language of this element, but instead seek to
 16 improperly insert two extraneous limitations. First, Defendants seek to confine what the
 17 “allocation” is to a dedicated frequency for data. Second, Defendants seek to infer a restriction
 18 on the separate operation of a node with respect to a prior signal – that the node retain its
 19 reserved access slot. Neither tactical contention passes muster.

21 Some claims contain no frequency limitation at all and others merely recite that disclosed
 22 signals in a given double-phase event appear on “differing frequencies.” For example, claim 1 of
 23 the ‘267 Patent contains limitations that include a random access request signal, a first grant
 24 signal, a reserve access request signal, a second grant signal, and transmitting data packets.
 25 Claim 2 depends from that claim 1 and states that the first grant, reserve request signal, second
 26 grant signal, first data packet are on “differing frequencies.” The doctrine of claim differentiation
 27 provides a rebuttable presumption that claim 2 implies that claim 1 is not required to have these
 28 signals all appear on “different frequencies.” *See Baxter Healthcare Corp. v. Fresenius Med.*

1 *Care Holdings, Inc.*, No. C 07-1359, 2009 U.S. Dist. LEXIS 14842, at *13 (N.D. Cal. Feb. 10,
 2 2009) (“Under the doctrine of claim differentiation, when one claim does not recite a particular
 3 limitation that is recited in another claim, ‘that limitation cannot be read into the former claim.’”
 4 (quoting *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1326 (Fed. Cir. 2003));
 5 *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111,
 6 1123 (Fed. Cir. 2001) (Claim terms should not be read to contain a limitation “where another
 7 claim restricts the invention in exactly the [same] manner.”). Likewise, other independent claims
 8 of the ‘267 and the ‘492 Patents contain these implications. See Exh. A, claims 25, 26, 30, 31,
 9 32, 33, 36, 39, 42; Exh. C, claims 19 and 20.

11 Defendants’ construction would have this Court construe all second grants as providing a
 12 separate frequency and then further confine that uplink frequency to being solely dedicated for
 13 that signal. In addition to violating the “cardinal sin” of imposing extraneous limitations, this
 14 construction (1) ignores the doctrine of claim differentiation and (2) would re-write the claims
 15 instead of construing them as written. See *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898,
 16 910 (Fed. Cir. 2004) (“the presence of a dependent claim that adds a particular limitation raises a
 17 presumption that the limitation in question is not found in the independent claim”); *Ecolab*, 569
 18 F.3d at 1344; *Becton Dickinson & Co.*, 22 F.2d at 799 n.6.

20 In addition to canons of claim construction, Defendants’ construction ignores the
 21 specification, which states in various places that certain frequencies may carry different types of
 22 signals, including:

24 [A] third local frequency carries communication packets from the pager units to the
 25 central control station; and a fourth local frequency carries a status or request signal from
 the paging units to the central control station.

26 The third frequency (f3) carries pager status data and alphanumeric data from paging unit
 27 22 to central control station 20.

28 Exh. A, Col. 2:3-7, Col. 4:37-39.

1 A POSA would understand that in most wireless communication systems, it is generally
2 useful to minimize the number of frequencies, but that additional frequencies are routinely added
3 to include other additional features or capacity. Dinan Decl., Exh. E, ¶ 55. For example, as
4 capacity grows and the system becomes capacity limited, there might be a need to add additional
5 frequencies. The Patents describe that these frequencies carry certain signals. But the Patents do
6 not teach that these frequencies are dedicated to only one type of transmission or suggest
7 technical reasons why that must be the case.
8

9 A POSA at the time of the invention would understand that while the claimed inventions
10 are described in terms of identifying separate frequencies to carry certain signals, such as having
11 the ability to send uplink requests on one frequency while sending data on a different uplink
12 frequency, a carrier's radio resources might be used to transmit additional types of information if
13 needed in a system. Dinan Decl., Exh. E, ¶ 57. Thus, a system using the claimed "nodes" in a
14 network could be designed in a large scale that used strictly dedicated frequencies for certain
15 types of signals, but the specification does not foreclose the possibility that a particular frequency
16 could, for example, contain other types of signals, if needed. Indeed, the provision of different
17 types of signals on logical channels was the norm in prior large-scale systems as it is in the
18 present. *Id.*
19

20 There is also no basis whatsoever for Defendants' second extraneous limitation that the
21 node "retains [ing] the [previously] assigned time slot for transmitting the reserved access slot."
22 The specification describes an embodiment where a node that remains active and remains in a
23 certain cell, can retain a reserved slot for future reserved access signals. There is no requirement
24 that an assigned time slot remain assigned as the specification describes a command processing
25 routine that includes a time slot change. Exh. A, Col. 5:12-42, Fig. 5. The node could move into
26 another cell, or go idle, or shutdown, or any other number of states where a new reserved access
27 slot would be assigned. Dinan Decl., Exh. E, ¶ 59.
28

I. “clocking signal”

GPNE’s Construction	Defendants’ Construction
A signal that contains timing information used for allocating resources.	A signal generated by a clock unit.

As mentioned above, the nodes and controllers communicate regarding coordination of the slots used by the nodes and controllers, and *slots* are actually specific *times* when a node can send. Thus, it is manifest that the nodes and controller are synchronized and the specification provides a method for accomplishing the synchronization signaling. As the asserted ‘954 Patent Abstract succinctly states: “The communication controller further transmits a clocking signal allowing synchronization of the node signals with the controller signals.” Exh. B, Abstract. The specification teaches that a central control station generates a local clock signal, f_{clk} , which, in turn, is used to modulate a first frequency f_1 transmitted to the nodes. Exh. A, Col. 3:27-29. The specification explains that the first frequency “carries the local clock-aligning signal.” Exh. A, Col. 4:33-35. This first frequency contains information that serves as the foundation for a time slot scheme that is used to coordinate the transmission and reception of information/messages between a node and the central control station. See Section I(B). For example, the specification explains that frequency f_4 , which “carries a pager request signal from [a node] to central control station” (Exh. A, Col. 4:39-41) in predetermined time slots, is “related to the clock-aligning signal (carried by frequency f_1) and assigned whereby the fourth frequency is utilizable by a plurality of other [nodes].” Exh. A, Col. 4:47-50. In other words, the information contained in the clock/aligning signal is used in the allocation of time slots on frequencies (*i.e.*, resources) such as f_4 , which aligns with GPNE’s proposed construction.

The claims themselves also give a strong indication as to the proper construction of the terms at issue:

- Claim 27 of the ‘267 Patent: “wherein the interface is further configured to transmit a clocking signal with which the first node can synchronize signals.” Exh. A, Col. 17:34-36 (emphasis added).
- Claim 13 of the ‘954 Patent: “receive a clocking signal used to enable requests including a first request from the first node” Exh. B, Col. 16:59-60 (emphasis added).

1 The clocking/aligning signals of the Patents are indisputably signals that allow the
 2 node and controller to synchronize the timing of slots used to send and receive signals and
 3 data. Thus follows GPNE's proposed construction – "a signal that contains timing
 4 information used to allocated resources."

5 Defendants shift the focus away from the objective and proper meaning of the clocking
 6 signal to a device that can generate a type of clocking signal ("a signal generated by a clock
 7 unit") – to read in that separate device into the claims. While it may be technically accurate as to
 8 one way to use hardware to create a clocking signal disclosed in the specification, the clocking
 9 signal disclosed in the claims is properly understood as a type of over-the-air synchronization
 10 signal so that the nodes and the central control station can be aligned in time to allocated the
 11 radio frequency channels resources that are time slotted. Dinan Decl., Exh. E, ¶ 38.

12 The parties agree that the claim's use of "clocking signal" carries the same meaning as
 13 aligning signal,"¹⁰ which demonstrates that "clocking" in this use is not merely limited to the
 14 structural notion that a device called a "clock" is involved at some point, but that the signal is
 15 functionally used for aligning (synchronizing) nodes and the control station so that resources are
 16 allocated without collisions.

17 **IV. CONCLUSION**

18 For the foregoing reasons, GPNE requests that the Court adopt its proposed constructions
 19 and reject those proffered by Defendants.

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Respectfully submitted,

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28 ¹⁰ See Dkt. No. 66 in Case No. 5:12-cv-02885 (Patent Local Rule 4-3 Joint Claim Construction and
 Prehearing Statement), Section A at No. 4: "The parties agree that the construction for 'aligning signal'
will be the same as the construction for 'clocking signal.'"

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CERTIFICATE OF SERVICE

I hereby certify that on April 15 1, 2013, I electronically submitted the foregoing GPNE'S OPENING BRIEF ON CLAIM CONSTRUCTION using the electronic case files system of the court. The electronic case files system sent a "Notice of Electronic Filing" to individuals who have consented in writing to accept this Notice as service of this document by electronic means.

/s/ Randall T. Garteiser
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